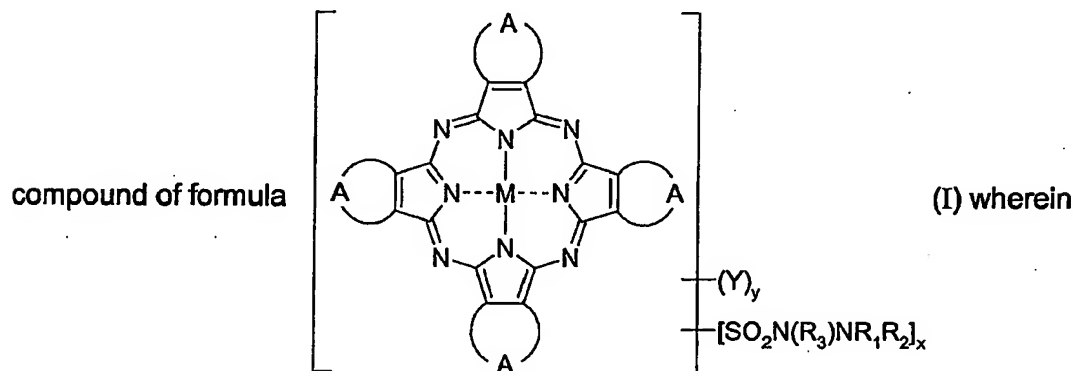


What is claimed is:

1. An optical recording medium comprising a substrate, a recording layer and optionally one or more reflecting layers, wherein the recording layer comprises a



5 M denotes 2 hydrogen atoms or a 2- to 4-valent metal which can optionally be coordinated or bonded to 1 or 2 additional ligands;

each A independently of the others is an unsaturated divalent radical which may be unsubstituted or mono- or poly-substituted by Y and/or by $\text{SO}_2\text{N}(\text{R}_3)\text{NR}_1\text{R}_2$ and together with the two carbon atoms of the fused-on porphyrazine moiety forms an aromatic homo- or N-hetero-cyclic ring system;

10

each Y independently of all others is halogen, R_4 , OH, OR_4 , SR_4 , NO_2 , NR_4R_5 , O-CO-R_4 , $\text{NR}_4\text{-CO-R}_5$, CN, COOR_4 , CONHR_4 , CONR_4R_5 , CO-R_4 , SO_2R_4 , SO_2NH_2 , SO_2NHR_4 , $\text{SO}_2\text{NR}_4\text{R}_5$, $\text{P(=O)R}_4\text{R}_5$, $\text{PO(R}_4\text{)OR}_5$, $\text{PO(OR}_4\text{)OR}_5$, or $\text{C}_1\text{-C}_{12}\text{alkyl}$, $\text{C}_3\text{-C}_{12}\text{cycloalkyl}$, $\text{C}_2\text{-C}_{12}\text{alkenyl}$ or $\text{C}_3\text{-C}_{12}\text{cycloalkenyl}$ each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_6 , or $\text{C}_6\text{-C}_{14}\text{aryl}$, $\text{C}_4\text{-C}_{12}\text{heteroaryl}$, $\text{C}_7\text{-C}_{18}\text{aralkyl}$ or $\text{C}_5\text{-C}_{16}\text{heteroaralkyl}$ each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_7 ;

15

R_1 is hydrogen, COOR_4 , CONHR_4 , CONR_4R_5 , CO-R_4 , SO_2R_4 , $\text{P(=O)R}_4\text{R}_5$, $\text{PO(R}_4\text{)OR}_5$, $\text{PO(OR}_4\text{)OR}_5$, or $\text{C}_1\text{-C}_{12}\text{alkyl}$, $\text{C}_3\text{-C}_{12}\text{cycloalkyl}$, $\text{C}_2\text{-C}_{12}\text{alkenyl}$ or $\text{C}_3\text{-C}_{12}\text{cycloalkenyl}$ each unsubstituted or substituted by one or more, where

20

- 32 -

applicable identical or different, radicals R_6 , or C_6-C_{14} aryl, C_4-C_{12} heteroaryl, C_7-C_{18} aralkyl or C_5-C_{16} heteroaralkyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_7 ;

R_2 and R_3 are each independently of the other hydrogen or R_8 ;

- 5 R_4 , R_5 and R_8 are each independently of the others C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_2-C_{12} alkenyl or C_3-C_{12} cycloalkenyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_6 , or C_6-C_{14} aryl, C_4-C_{12} heteroaryl, C_7-C_{18} aralkyl or C_5-C_{16} heteroaralkyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_7 ;
- 10 R_6 is halogen, hydroxy, $O-R_9$, $O-CO-R_9$, $S-R_9$, $CO-R_9$, cyano, carboxy, carbamoyl, $COO-R_9$, $CONH-R_9$, $CONR_9R_{10}$, SO_2R_9 or SO_3R_9 ;

- R_7 is halogen, nitro, cyano, hydroxy, R_{11} , $C(R_{12})=CR_{13}R_{14}$, $O-CO-R_{15}$, formyl, $NR_{15}R_{16}$, $CONH_2$, $CONHR_{15}$, $CONR_{15}R_{16}$, SO_2R_{15} , SO_2NH_2 , SO_2NHR_{15} , $SO_2NR_{15}R_{16}$, $COOH$, $COOR_{15}$, $OCOOR_{15}$, $NHCOR_{15}$, $NR_{15}COR_{17}$,
- 15 $NHCOOR_{15}$, $NR_{15}COOR_{17}$, $P(=O)R_{15}R_{17}$, $P(=O)R_{15}OR_{17}$, $P(=O)OR_{15}OR_{17}$, or C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_2-C_{12} alkenyl, C_3-C_{12} cycloalkenyl, C_1-C_{12} alkylthio, C_3-C_{12} cycloalkylthio, C_2-C_{12} alkenylthio, C_3-C_{12} cycloalkenylthio, C_1-C_{12} alkoxy, C_3-C_{12} cycloalkoxy, C_2-C_{12} alkenyloxy or C_3-C_{12} cycloalkenyloxy each unsubstituted or substituted by one or more, where applicable identical or
- 20 different, radicals R_6 ;

R_9 and R_{10} are each independently of the other C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_2-C_{12} alkenyl, C_3-C_{12} cycloalkenyl, C_6-C_{14} aryl, C_4-C_{12} heteroaryl, C_7-C_{18} aralkyl or C_5-C_{16} heteroaralkyl; or

- R_9 and R_{10} together with the common N are pyrrolidine, piperidine, piperazine or morpholine each unsubstituted or mono- to tetra-substituted by C_1-C_4 alkyl;
- 25

- 33 -

- R_{11} is C_6 - C_{14} aryl, C_4 - C_{12} heteroaryl, C_7 - C_{18} aralkyl or C_5 - C_{16} heteroaralkyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_{18} ;
- 5 R_{12} is hydrogen, cyano, halogen, nitro, or C_1 - C_{12} alkyl, C_3 - C_{12} cycloalkyl, C_2 - C_{12} alkenyl or C_3 - C_{12} cycloalkenyl each unsubstituted or substituted by one or more, where applicable identical or different, halogen, hydroxy, C_1 - C_{12} alkoxy or C_3 - C_{12} cycloalkoxy radicals, or C_6 - C_{14} aryl, C_4 - C_{12} heteroaryl, C_7 - C_{18} aralkyl or C_5 - C_{16} heteroaralkyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_6 and/or by nitro;
- 10 R_{13} and R_{14} are each independently of the other $NR_{15}R_{16}$, CN, $CONH_2$, $CONHR_{15}$, $CONR_{15}R_{16}$ or $COOR_{16}$;
- R_{15} , R_{16} and R_{17} are each independently of the others R_{11} , or C_1 - C_{12} alkyl, C_3 - C_{12} cycloalkyl, C_2 - C_{12} alkenyl or C_3 - C_{12} cycloalkenyl each unsubstituted or substituted by one or more, where applicable identical or different, halogen, hydroxy, C_1 - C_{12} alkoxy or C_3 - C_{12} cycloalkoxy radicals; or
- 15 R_{15} and R_{16} together with the common N are pyrrolidine, piperidine, piperazine or morpholine each unsubstituted or mono- to tetra-substituted by C_1 - C_4 alkyl; or carbazole, phenoxazine or phenothiazine each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_{18} ;
- 20 R_{18} is nitro, SO_2NHR_9 , $SO_2NR_9R_{10}$, or C_1 - C_{12} alkyl, C_3 - C_{12} cycloalkyl, C_1 - C_{12} alkylthio, C_3 - C_{12} cycloalkylthio, C_1 - C_{12} alkoxy or C_3 - C_{12} cycloalkoxy each substituted by one or more, where applicable identical or different, radicals R_6 ; and
- x is a number from 1 to 8, preferably from 2 to 4, and y is a number from 0 to 15, the sum $x + y$ being a number from 1 to 16;
- 25 wherein from 2 to 10 identical or different radicals of formula (I) can be bonded to one another by one or more additional bonds between two or more identical or

- 34 -

different R_1 , R_2 , R_3 or Y , so that dimers, trimers or oligomers having from 4 to 10 phthalocyanine units are formed.

2. An optical recording medium according to claim 1, wherein in formula (I)

- A is 1,4-butadienylene;
- 5 • M denotes 2 hydrogen atoms, Mg, Al, Si, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Zr, Mo, Pd, Sn, Hf, Pt or Pb, optionally coordinated or bonded to 1 or 2 additional ligands, depending upon valency;
- Y is hydrogen, bromine, iodine, OR_4 , NO_2 , CN, unsubstituted C_1 - C_{12} alkyl, C_3 - C_{12} cycloalkyl or C_2 - C_{12} alkenyl, or C_6 - C_{10} aryl or C_7 - C_{12} aralkyl each unsub-
10 stituted or substituted by one or more, where applicable identical or different, radicals R_7 ;
- R_1 is $COOR_4$, $CONHR_4$, $CONR_4R_5$, $CO-R_4$, SO_2R_4 , or C_6 - C_{10} aryl, C_4 - C_8 hetero-aryl or C_7 - C_{12} aralkyl each unsubstituted or substituted by R_7 ;
- R_2 and R_3 are each independently of the other hydrogen or R_8 ;
- 15 • R_4 , R_5 and R_8 are each independently of the others C_3 - C_8 alkyl, C_3 - C_8 cycloalkyl or C_3 - C_8 alkenyl each unsubstituted or substituted by R_8 , or C_6 - C_{10} aryl or C_7 - C_{12} aralkyl each unsubstituted or substituted by R_7 ;
- R_6 is halogen, hydroxy, $O-R_9$, $O-CO-R_9$, $CO-R_9$, cyano or SO_2R_9 ;
- R_7 is halogen, nitro, cyano, $O-CO-R_{15}$, $NR_{15}R_{16}$, $CONHR_{15}$, $CONR_{15}R_{16}$, SO_2R_{15} ,
20 SO_2NH_2 , SO_2NHR_{15} , $SO_2NR_{15}R_{16}$, $COOH$, $COOR_{15}$, $NHCOR_{15}$, $NR_{15}COR_{17}$, or unsubstituted or substituted C_1 - C_{12} alkyl, C_3 - C_{12} cycloalkyl, C_1 - C_{12} alkoxy or C_3 - C_{12} cycloalkoxy;
- R_9 and R_{10} are each independently of the other C_1 - C_8 alkyl, C_3 - C_6 cycloalkyl, C_2 - C_8 alkenyl, C_3 - C_8 cycloalkenyl or phenyl;
- 25 • R_9 and R_{10} together with the common N are pyrrolidine, piperidine, piperazine or morpholine each unsubstituted or mono- to tetra-substituted by C_1 - C_4 alkyl;

- 35 -

- 5 • R_{15} , R_{16} and R_{17} are each independently of the others C_1 - C_8 alkyl, C_5 - C_6 cycloalkyl, C_2 - C_8 alkenyl or C_5 - C_6 cycloalkenyl each unsubstituted or substituted by one or more, where applicable identical or different, halogen, hydroxy or C_1 - C_4 alkoxy radicals, or phenyl or benzyl each unsubstituted or substituted by one or more, where applicable identical or different, halogen, nitro, C_1 - C_8 alkyl or C_1 - C_4 alkoxy radicals;
 - R_{15} and R_{16} together with the common N are pyrrolidine, piperidine, piperazine or morpholine each unsubstituted or mono- to tetra-substituted by C_1 - C_4 alkyl; and/or
 - 10 • x is a number from 1 to 4, and y is a number from 0 to 4,
 - wherein from 2 to 5 identical or different radicals of formula (I) can be bonded to one another by one or more additional bonds between two or more identical or different R_1 , R_2 , R_3 or Y, so that dimers, trimers or oligomers having 4 or 5 phthalocyanine units are formed.
- 15 3. An optical recording medium according to claim 1 or 2, wherein in formula (I)
- M is Co(II), Ni(II), Cu(II), Zn(II), Sn(II) or Pb(II), especially Cu(II);
 - Y is hydrogen, bromine or OR_4 , very especially hydrogen;
 - 20 • R_1 is $COOR_4$, $CONHR_4$, $CONR_4R_5$, $CO-R_4$, SO_2R_4 , or unsubstituted or substituted phenyl or C_7 - C_{12} aralkyl, very especially $CO-R_4$, SO_2R_4 or unsubstituted or substituted phenyl or C_7 - C_{12} aralkyl;
 - R_2 and R_3 are each independently of the other hydrogen or C_1 - C_{12} alkyl;
 - R_4 , R_5 and R_8 are each independently of the others C_3 - C_8 alkyl unsubstituted or substituted by R_6 , or phenyl unsubstituted or substituted by R_7 ;
 - R_6 is halogen, hydroxy, $O-R_9$, $O-CO-R_9$, $CO-R_9$, cyano or SO_2R_9 ;

- 36 -

- R₇ is halogen, nitro, cyano, O-CO-R₁₅, NR₁₅R₁₆, or C₁-C₁₂alkyl, C₃-C₁₂cycloalkyl, C₁-C₁₂alkoxy or C₃-C₁₂cycloalkoxy each unsubstituted or substituted by R₆;
 - R₉ and R₁₀ are each independently of the other C₁-C₄alkyl or phenyl;
 - R₉ and R₁₀ together with the common N are piperidine or morpholine each
5 unsubstituted or mono- to tetra-substituted by C₁-C₂alkyl;
 - R₁₅, R₁₆ and R₁₇ are each independently of the others C₁-C₄alkyl unsubstituted or substituted by one or more, where applicable identical or different, halogen, hydroxy or C₁-C₄alkoxy radicals; and/or
 - R₁₅ and R₁₆ together with the common N are piperidine or morpholine each
10 unsubstituted or mono- to tetra-substituted by C₁-C₄alkyl.
4. An optical recording medium according to claim 1, 2 or 3, wherein the recording layer contains from 1 to 100 % by weight, preferably from 20 to 100 % by weight, especially from 50 to 100 % by weight, of the compound of formula (I) or of a mixture of compounds of formula (I).
- 15 5. An optical recording medium according to claim 1, 2, 3, 4 or 5, wherein substrate, recording layer, reflector layer and, if present, covering layer are arranged in that order.
6. An optical recording medium according to claim 1, 2, 3, 4 or 5, additionally comprising a covering layer, wherein substrate, reflector layer, recording layer and
20 covering layer are arranged in that order.
7. An optical recording medium according to claim 1, 2, 3 or 4, wherein the recording layer has marks of different lengths, the shortest of which are almost circular and the longest of which are of a length corresponding to approximately four times the width.

- 37 -

8. A method of recording or playing back data, wherein the data on an optical recording medium according to claim 1, 2, 3, 4, 5, 6 or 7 are recorded or played back at a wavelength of from 300 to 500 nm.
9. A method according to claim 8, wherein the recording takes place at a linear speed v of at least $4.8 \text{ m} \cdot \text{s}^{-1}$ and an output P of at most $[\nu/0.1 \text{ m} \cdot \text{s}^{-1}]^{1/4} \text{ mW}$.
10. Use of a compound of formula (I) according to claim 1, 2 or 3 in the production of an optical recording medium.
11. An optical recording medium comprising a substrate having depressions, a recording layer and optionally one or more reflecting layers, wherein the recording layer has a thickness of from 30 to 80 nm in the depressions and a thickness of from 20 to 70 nm next to the depressions, the difference between the layer thickness in the depressions and the layer thickness next to the depressions being a maximum of 20 nm, preferably a maximum of 10 nm.
12. An optical recording medium according to claim 11, wherein the recording layer comprises a compound of formula (I) according to claim 1, 2 or 3.
13. A method of recording or playing back data, wherein marks of different reflectivity are created or read on an optical recording medium according to claim 11 or 12 using a laser beam.
14. A method according to claim 13, wherein the marks are of lower reflectivity.
15. A method according to claim 13 or 14, wherein the laser beam is directed through the substrate into the depressions of the recording layer.
16. A method according to claim 13, 14 or 15, wherein the laser beam has a wavelength of from 300 to 500 nm.